

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 1-21 will remain active in the application.

As preliminary matters, counsel notes that the examiner has not acknowledged receipt of the certified copies of the foreign priority documents. They were in fact transmitted to the USPTO by WIPO as indicated in the "Notice of Acceptance of Application Under 35 USC §371" dated January 10, 2007; *see* the last line of page 1 of that communication indicating a receipt date of May 8, 2006. In due course the examiner is requested to acknowledge receipt of these certified copies under item 12a)3. of the Office Action Summary.

Similarly, this application includes three sheets of drawings. These are part of the international application as filed and in the same communication as mentioned above were received on May 8, 2006. In due course acceptance of the drawings is requested; *see* item 10 of the Office Action Summary.

Claim 1 has been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention, directed to preferred aspects of the disclosure and advance examination generally for the reasons explained in more detail below. The range of 1-10% may be found in the description of the invention, in particular at page 18 next to the last line, hence there is basis for this amendment in the disclosure of the application as originally filed.

Claims 1-4, 7-9, 11-17 and 19-21 stand rejected as lacking novelty over US 5,531,925 (Landh et al) while the remaining claims (5, 6, 10 and 18) are argued to be obvious over this document. Applicants disagree (as did the author of the International Preliminary Report on Patentability).

Landh et al is principally concerned with the formation of colloidal particles having an interior non-lamellar phase, and with processes for their formation. The majority of this document relates to the formation of GMO/water phases including GMO/fragmentation agent/water, GMO/SPC/water, GMO/SPC/fragmentation agent/water and GMO/somatostatin/water systems.

In item 3 of the Action, the Examiner asserts that Landh et al discloses:

- a cationic peptide active agent having an isoelectric point of above 7.0, since it discloses

somatostatin (octreotide) having a solubility of 0.3 mg/ml, a net charge of 4 and a  $pI = 10$  (col. 14, lines 15-25);

- a neutral structure forming amphiphile, since it discloses GMO (col. 5, line 15 and col. 14, lines 15-45);

- an anionic structure forming amphiphile having  $C_6$ - $C_{32}$  alkyl and alkenyl non-polar groups and comprising a fatty acid, since it discloses GMO of which 1% is made up of fatty acids having a composition including  $C_{16}$ ,  $C_{18}$  and  $C_{20}$  groups, or SPC having  $C_8$ ,  $C_{12}$ ,  $C_{16}$ ,  $C_{18}$  groups (col. 11, lines 35-50), and amphiphilic polymers comprising anionic alkylsulfates, soaps and sulfosuccinates (col. 16, line 31);

- a non-lamellar phase structure, since the abstract discloses colloidal particles comprising an interior phase of a non-lamellar reversed cubic, hexagonal or intermediate phase, or an  $L_3$  phase.

However, it seems that in the context of Landh et al these disclosures are isolated and relate to disparate particle systems disclosed as separated embodiments in that patent. Moreover, there is no disclosure of any composition which satisfies all of the conditions of current claim 1 even if all of the above are taken in combination.

In particular, there does not appear to be any disclosure of a composition having the stipulated 0.5-20 wt.% (now amended to 1-10%) range of anionic structure forming amphiphile, or of the need for these to have particular non-polar groups ( $C_6$ - $C_{32}$  alkyl/alkenyl), or of the effects which are to be achieved, i.e. the improvement in delivery of cationic peptides.

Furthermore, although the anionic amphiphiles "alkylsulfates, soaps and sulfosuccinates" are listed in column 16, they are part of a much longer list of preferred fragmentation agents and there is no stipulation with regard to the amount which should be present.

In view of the above, the only compositions disclosed in Landh et al are outside the scope of current claim 1 because they do not contain an active agent and/or do not contain the necessary amount of anionic structure forming amphiphile (*see* column 11, lines 50-66 and column 17, line 35). Current claim 1 and its dependent claims therefore cannot be anticipated by Landh et al.

In order to further emphasize the novelty of the present application, claim 1 is above amended to specify the composition contains 1 to 10% of an anionic amphiphile. The anionic

fatty acid components indicated by the Examiner are present in Landh et al only as impurities, such as 1% in GMO. Since the proportion of GMO in the compositions can never be 100%, these components cannot reach the minimum level of 1% in the overall mixture.

Turning to the "obviousness" rejection, at section 4, the Examiner indicates that Landh et al teaches towards the current invention. However, Landh et al is directed to the provision of small particles of amphiphile-based solvent systems for drug delivery and other applications. The solution to this problem is a method of fragmentation which provides dispersed particles of non-lamellar phases in solvents such as water.

Landh et al is silent with regard to the problem addressed by the present application, the improvement in delivery of *cationic peptides*, particularly for oral and depot administration, which is achieved in the present case by the recognition that the *inclusion of an anionic lipid component* improves the drug load, delivery and in particular the protection of the peptide from the endogenous peptidase activity present throughout the body. It has also been demonstrated that the use of such simple anionic lipids as those now recited overcomes the problem that certain sterol-type anionic components disrupt the non-lamellar phase -- another problem which is not recognized in Landh et al. It is notable that this key aspect of including an anionic lipid component, from which the advantage of the present invention is derived, is the one aspect of the claim not mentioned by the Examiner in section 4. This is because Landh et al does not consider such a component but also demonstrates that Landh does not provide teaching that could render the present claim obvious.

The Examiner argues that it would be obvious to achieve the claimed features of each of claims 5, 6, 10 and 18 but does not indicate *how* such features could be achieved. The answer, however, is to include an anionic lipid component in an amount sufficient to achieve these goals. This is now limited to 1 to 10%, which is a level that would not be achieved by the inclusion of incidental impurities. There is no teaching prior to the present application which could lead a skilled worker to use an anionic amphiphile in order to achieve these results. The present claims cannot therefore be obvious over Landh et al or any of the cited art.

Since there is no discussion in Landh et al of the problems addressed by the current application, it seems fanciful to suggest that this document can teach the skilled person the claimed solution. No incentive is provided to modify Landh et al in order to develop the

composition of claim 1 and no advantage of the use of an anionic lipid component is suggested.

As recognized by the International Examiner, the effects discussed above are not taught towards by the cited art, and indeed, the prior art Chang et al (D5 in the ISR) indicates that no advantage would be derived, thus entirely missing the effects such as peptidase protection now presented by the inventors, and teaching directly away from the present invention.

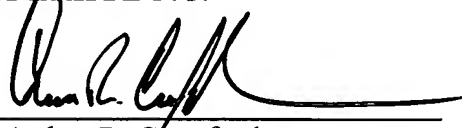
Claims 8 and 20 are amended to correct a typographical errors.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited. Should the examiner have further questions, please contact the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_

  
Arthur R. Crawford  
Reg. No. 25,327

ARC:eaw  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100